

Journal of the Royal Society of Arts

NO. 5009

FRIDAY, 2ND AUGUST, 1957

VOL. CV

AWARD OF THE R. B. BENNETT EMPIRE PRIZE, 1957

On the recommendation of the Commonwealth Section Committee, and with the approval of His Royal Highness the President, the Council has awarded the R. B. Bennett Empire Prize for 1957 to Mr. Benedict Chuka Enwonwu, M.B.E., for his achievements as a sculptor, and for his work in encouraging the development of African art. Mr. Enwonwu was born in Nigeria in 1921, and educated there and in England, at the Slade School and the London School of Economics. He held his first one-man exhibition in Lagos in 1943, and impressive displays of his work have since appeared in Paris, London and several cities in the U.S.A. In his own country—where since 1948 he has been Art Adviser to the Federal Government—notable examples of his sculpture include the doors and panels and the Speaker's Chair for the Federal House of Representatives; the mace of the University College, Abadan; and a figure of the Risen Christ for the college chapel. Mr. Enwonwu is at present engaged on a portrait in bronze of Her Majesty The Queen, for the House of Representatives, Lagos.

INDUSTRIAL ART BURSARIES COMPETITION

The winning and commended designs submitted in the 1956 Industrial Art Bursaries Competition, which were displayed in the Society's House in May, and at the High Wycombe College of Further Education and the Falmouth School of Art in June and July respectively, will be exhibited during the autumn as follows:

- 14th August–18th September, 1957: Belfast College of Art, Belfast.
- 23rd September–3rd October, 1957: Glasgow School of Art, 167, Renfrew Street, Glasgow, C.3.
- 7th October–25th October, 1957: Leeds College of Art, Vernon Street, Leeds, 2.
- 28th October–15th November, 1957: Leicester College of Art, The Newarke, Leicester.

Examples are included of work done in the following fields of design:

Domestic electrical appliances; electric light fittings; domestic solid-fuel burning appliances; carpets; dress textiles; furnishing textiles; women's fashion wear; acrylic sheet ('Perspex'); laminated plastics; P.V.C. plastics sheeting; cinema and television settings; domestic glassware; footwear; furniture; pottery; and the wallpaper.

PLUMBING

A paper by

G. L. ACKERS, O.B.E., M.I.C.E.,

*Chief Sanitary Engineer, Ministry of Works, read
to the Society on Wednesday, 20th March, 1957,
with Nigel Hannen, B.A., F.I.O.B., Past President,
National Federation of Building Trades Employers,
in the Chair*

THE CHAIRMAN: Mr. Ackers is an expert on all the various aspects of plumbing: the legislative, theoretical and practical sides. He will also deal with its development and, I hope, some of the prospects for the future. It is a very wide subject and I am sure that we shall all listen with great interest.

The following paper, which was illustrated by lantern slides, was then read:

THE PAPER

Before commencing the preparation of this paper the Royal Society of Arts suggested that it should be of a comprehensive nature, should emphasize any significant new developments and should stress the fact that plumbing troubles largely occur in plumbing systems which have not been designed as part and parcel of the building. If anyone meets difficulty in quickly appreciating the last of these terms of reference, let him spend a night in a hotel which, having been built before its customers were offered hot and cold running water in the bedrooms, has subsequently installed this service.

Note that last word 'service': it should be the fundamental consideration in plumbing design and if the building owner, architect and plumbing designer bear in mind that plumbing is made for man and not man for plumbing, then enjoyment of their building will be more secure. Sanitary provision is a functional requirement of all buildings occupied by man. So much is this the case that it, and not dining-rooms or passenger lifts, is a statutory requirement. This being the case, many of us find difficulty in the apparent relegation of plumbing to the position of an afterthought in the planning of a building, even up to recent times. No architect divides his restaurant and kitchen into bits to be distributed all over his building, nor does he design a lift shaft in sections to be staggered across his plan. It is nowadays a pleasant professional experience however, to find that architects are becoming increasingly conscious of the desirability of carefully planning into a building the sanitary services and, indeed, to hear them, in public meetings, advocate it.

Let it here be quite clearly understood that a perfectly satisfactory plumbing system can be designed for any stated requirement. 'Stated' is here the operative word and should be read to imply that not only should the architect have settled with his client the intended types of occupation, but that he also should have consulted a specialist plumbing designer well before his planning of the building

has reached the working drawing stage. If this has not been done, later complaint and disappointment, and, let it not be overlooked, increased expenditure should not be unexpected.

One further matter in this preamble: it is manifestly unsound practice for an architect to let out to tender, or to permit his main contractor to let out to tender, the plumbing design. It is equally unfair to those plumbing contractors of sound reputation and of wide experience who, knowing what is desirable, are handicapped by presumption of the architect's acceptance of the lowest or of a low tender. A cheap job may result, but here cheapness is not synonymous with economy.

The National Consultative Council of the Building and Civil Engineering Industries, comprising the principal organizations in Britain interested in building, set up an *ad hoc* committee, comprising representatives of the Royal Institute of British Architects, the National Federation of Building Trades Employers, the Federation of Associated Specialists and Sub-Contractors, and the Plumbing Trades Union, together with assessor members from interested Government Departments, to study plumbing as practised in the United Kingdom. This Committee produced a unanimous report which the National Consultative Council approved for publication in the trade and technical press and in municipal and local government journals; it was so published in 1951.¹

An extract from this published report, after stating that

a feature of outstanding importance is the completion of fully detailed schemes of plumbing and drainage as part of the main design of any building before tenders are invited

goes on to read:

In this country it is too often the practice for plumbing details and even sometimes complete designs to be left undetermined before the contractor submits his tender, with the result that the contract may be awarded to the firm which prepared the cheapest design rather than to the most efficient contractor. It is in design that the greatest contributions can be made to efficient and economical layout, and architects may well find that the employment of qualified designers with specialized knowledge at an early stage will often enable provision to be made to include the latest developments in layout and technique. It is obvious that competing tenders should all be related to the same design.

And that, be it noted, is the guarded language of official recommendation.

What then has the designer to do? He has to select sanitary appliances and arrange for the safe removal from the building of discharges from those appliances at all times in all seasons with due regard to the health, comfort and convenience of the user.

It is not proposed herein to reproduce design data which appear in official publications, to which reference may easily be made. These include, of course, water undertakers' and local authorities' byelaws, which are necessarily minimum requirements for they are the law.

While these minimum requirements must be ascertained and complied with, the designer must know something more; and to assist him, and to fill what until recent years has been a gap, Codes of Practice have been published by the

British Standards Institution. They have been drafted by modern practitioners, their drafts have been circulated for comment to all interested organizations and they are not published as Codes until this extensive current knowledge and wide experience in its practical application have been properly incorporated. Moreover, these Codes come up for review every five years and in this way may be kept up to date with advancing knowledge and practice. Furthermore, and in common with British Standards Specifications, Codes of Practice are being written into byelaws by the provision in a byelaw that compliance with a stated code of practice is deemed to satisfy the byelaw. This is the case, for example, with byelaw requirements in the prevention of damage by frost, and wherein compliance with British Standard Code of Practice C.P.99 (1956)—*Frost precautions for the water and sanitary services in buildings* is deemed to satisfy.² The Ministry of Housing and Local Government's *Circular No. 57/56* deals with such strengthening of existing byelaws on this subject.³

In his early collaboration with the architect, the plumbing designer must press for close grouping of sanitary appliances not only on plan but vertically also. Their discharges are connected to the drains by vertical stacks. The fewer the stacks, the greater the usage of each and the cleaner will each remain. Not only is operational efficiency increased, but costs are reduced both in capital outlay and in maintenance expenditure. These stacks have to be connected to the sewer by drains, and what has been said about stacks applies with equal force to the drains: it is cumulative.

The arrangement of the appliances about the stack should be such as to make their branch connections to the stack as short as possible. Again, not only will operational efficiency be increased but costs will be reduced and will be yet further reduced if these arrangements are such as will permit the single-stack system of plumbing.

It is preferable to have internal stacks; indeed, in multi-storey buildings this is so desirable as to be almost essential, for stacks should be provided with access doors for maintenance purposes and these in turn must be accessible. Access to stacks external to tall buildings might involve the costly business of erection of scaffolding from the ground or slinging cradles from the roof. Internal stacks should be housed in ducts, and these require architectural planning. Code of Practice C.P. 413 (1951) *Ducts for Services* gives in great detail information the designer should have.⁴ All these considerations emphasize the importance of early collaboration between architect and plumbing designer.

On this question of access it should here be noted that a well-designed plumbing system will give trouble-free performance and access should not be necessary other than for periodic cleaning and testing purposes. It is misuse of the system which causes trouble, sometimes complete blockage, and creates the necessity for access. It will be found that in houses, where self-penalization would result, misuse is a rare occurrence; for the householder, having suffered once, will do everything possible to prevent recurrence. It is in office blocks, hotels and such-like where misuse is more usual, and these buildings are normally multi-storey.

While the attitude which will engender misuse is to be deplored, in the interests of the majority it has to be taken into account. In buildings having a large number of occupants, the plumbing designer and architect should confer on the wisdom of not placing 'all their eggs in any one basket', for although the fewer the stacks the better, with large populations the question of a minimum of two for each sex should be considered, so that in the event of total blockage of one the occupants are not without some part of this service while clearance is being achieved. In large buildings this is generally resolved by layout for user convenience, which is discussed later.

The scale of provision of sanitary appliances must, of course, satisfy any special demand, but guidance in normal requirement will be found in Code of Practice C.P.3, *Chapter VII (1950)—Engineering and Utility Services*, in which Tables 4 to 11 of Part H set out scales of provision for public buildings, concert halls, hospitals, hotels, office buildings and the like.⁵ For factories and schools, guidance is also given, but for these there are statutory regulations decreeing minimum requirement and these should be consulted.

All these scales derive from experience in which factors such as peak user and permissible period of peak usage have become known. Quite simply, if a man takes ten minutes shaving, then for a communal sanitary apartment in a residential hostel the lavatory basin provision must be not less than one basin per six men if all the men are to get through in one hour, and not less than one basin per three men if they are to get through in half an hour.

In this exercise, points of interest will keep occurring. Two examples are given here. If mirrors are fixed above the basins in women's lavatories, time spent at the basins is not merely for ablutions. The time spent in titivating is quite indeterminate and the mirrors should therefore be placed elsewhere, where the women themselves can amicably do the determining. At peak usage in office buildings, factories and the like, the time of occupation of w.c.s. by women is found to be not the time of using but the time taken by the water-waste preventer to refill in order to give a flush. If the device permitting a one-gallon flush is incorporated, not only will this waiting time and scale of provision be reduced but water will be saved. This suggestion refers to buildings where quick repetitive flushing by means of flushing troughs or flushing valves has not been allowed by the water undertaker.

At this point attention might be drawn to requests for basins in the bedrooms of hotels and hostels. Such requests are tantamount to stating that the occupants do not desire baths. This disinclination to bath could derive from a lack of confidence in the cleanliness of the communal baths which are here involved. The provision of shower baths in lieu of slipper baths would surmount this objection, would increase hygiene and might well decrease water and fuel consumption. If from 1957 onwards our architects could prevail on building owners to provide a basin, w.c. and shower in a separate apartment *en suite* with every bedroom in communal residential establishments, refinement in this country would accordingly advance.

Having determined the types and numbers of appliances, their distribution

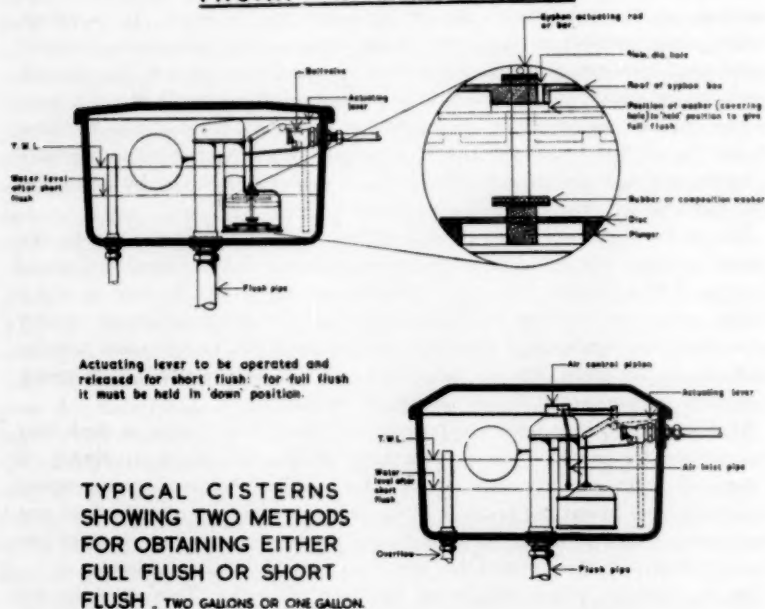
TRUNK WASTE SYSTEM

FIGURE 1.

within the building must then be settled. For large office blocks, for example, the Ministry of Works practice is stated in the following instruction:

Careful consideration should be given to the convenience of the staff; in large buildings there should be at least one lavatory for each sex on every floor. For very large buildings with well over one hundred staff on a floor consideration should be given to providing two lavatories for each sex on each floor, or arranging lavatories in different positions on alternate floors, so that staff remote from lavatories on their own floors have easy access by going up or down one storey.

Herein lies an automatic resolution of the 'all eggs in one basket' problem referred to earlier. The Ministry of Works instruction goes on to state:

In new office buildings, lavatories should normally be provided on the assumption that as many as 65 per cent of the staff may be male and 40 per cent female. These proportions should not be rigidly applied, but should be varied to meet special requirements.

On layout of sanitary apartments the instruction states:

Lavatory basins and w.cs. should be provided in the same apartment but the lavatory section should normally be separated from the w.cs. by a partition extending from floor to ceiling. The lavatory basins should be placed so that they are passed on the way from the w.cs. and urinals to the exit.

It will be seen that always the health and convenience of the user is the aim. The location of sanitary appliances, while having the convenience of the

user in mind, cannot be divorced from the practicability of installing pipes to convey their discharges to the drains, and each of these aspects must be made to combine in the design of efficient plumbing systems. At one stage in our civilization these wastes were chunked out of the window; this was no-pipe plumbing. Once pipes were introduced, their arrangement became and continues to be a subject for lively controversy.

Code of Practice C.P. 305 (1952)—*Sanitary Appliances*, divides these appliances into 'Soil Appliances' and 'Waste Appliances'.⁶ In what is called the two-pipe system of plumbing (a) all soil appliances are connected to one stack which is directly connected to the drain, and reliance is placed on a water-sealed trap in the appliance to prevent access of drain air into the building; and (b) all waste appliances are connected to a separate stack which is isolated from the drain by a water-sealed gulley, and, to prevent access of drain air into the building, reliance is placed on the gulley, on the air-break between stack and gulley, and on any water-sealed traps incorporated in the waste appliances. This difference in weight of precaution is not so illogical as it may seem if it is appreciated that soil appliances have to be located where there is natural ventilation direct to the external air, or otherwise where there is satisfactory artificial ventilation, and in neither case may the closet open directly into any room intended principally for human habitation, whereas waste appliances may be located anywhere within the building.

This separation of the two types of discharges is native to the system because no one would attempt to direct discharges from soil appliances through gullies. The essential point about the two-pipe system which should always be borne in mind is the gulley and not the separation of soil discharges.

In the early days of sanitation consciousness, it is not surprising to find that, whatever the cost, emphasis on safety rather than tolerance of doubt was the order of the day; but as time passed what constituted doubt came under review. The suggestion that drain air caused disease was refuted and, though nobody wanted our buildings to stink, a greater hazard to health was judged to lie in the gulleys and hopper heads of the two-pipe systems, from which filth could be transferred to food and crockery by flies.

The so-called one-pipe system was then developed in which all discharges, both soil and waste, were connected to one stack (or to separate stacks as circumstances required), but in which the stack (or stacks) were directly connected to the drain. This system has no gullies or hopper heads, so that, having left the appliances, the wastes do not see the light of day again until they arrive at the sewage treatment works. To prevent ingress of drain air, reliance is placed entirely on water-sealed traps incorporated in the sanitary appliances, and the maintenance of these water seals in all conditions of flow in the system becomes essential. To ensure this a ventilation pipework system is incorporated so that build up of positive or negative pressures in the plumbing system may be destroyed by exhaust to or intake from the atmosphere, and so will not register on the water seals in the traps.

In this way the water forming the seal is retained in the trap; but, with the

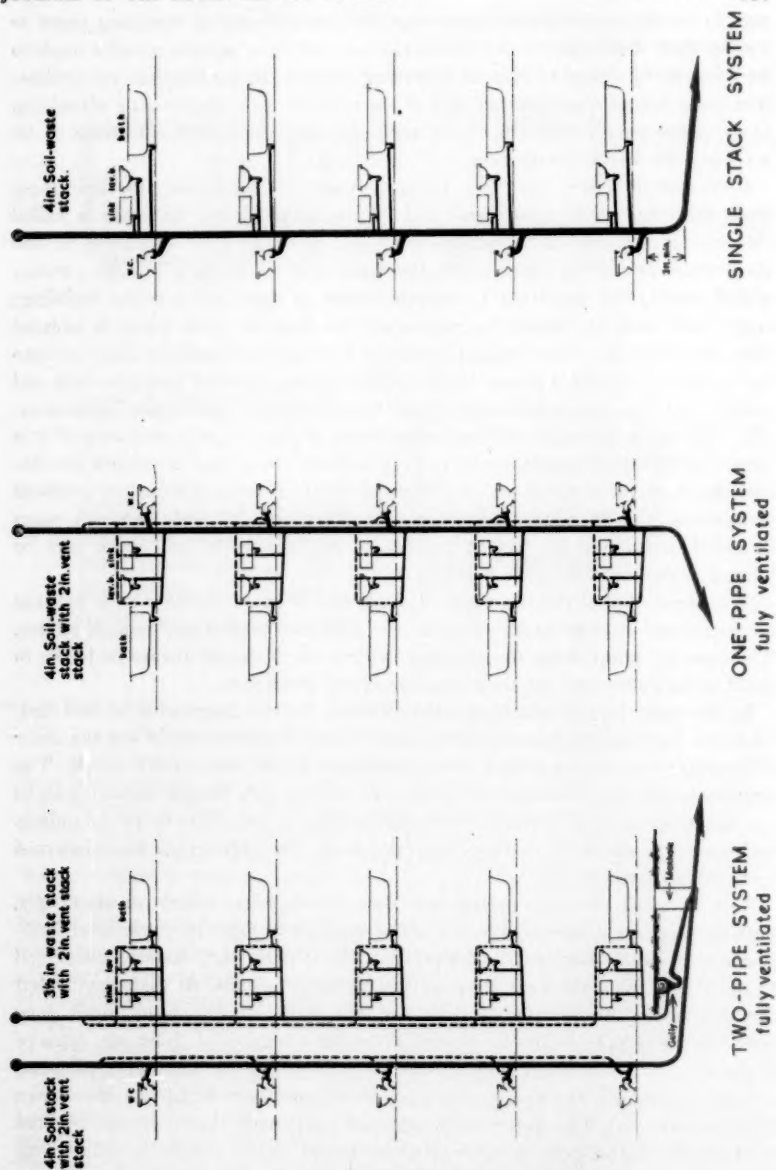


FIGURE 2.

passage of further time, it was argued that trap ventilation cost money and there was no necessity to retain all the water in the trap. Experiments were

undertaken and the forms of pipe runs which would ensure retention of at least one inch of water seal in the traps without trap ventilation were determined, and a one-pipe system without trap ventilation came into being and is called the 'Single Stack System'.

What may evolve after yet further passage of time cannot be said; but it is not difficult to imagine that the operation of an extractor fan in the head of the main vent pipe would dispense with the necessity for the traps themselves, for not only would it exhaust drain air to the atmosphere, but it would also ventilate the actual compartments in which sanitary appliances were located; waste appliances are here referred to, of course.

Diagrams of these systems of plumbing are to be found in Code of Practice, C.P. 304 (1953)—*Soil and Waste Pipes*,⁷ and for a detailed dissertation on the Single Stack System reference should be made to Building Research Station Digests Nos. 48 and 49,⁸ and to a technical paper read by A. F. E. Wise and J. Croft before the Royal Society of Health, entitled 'Investigation of single stack drainage for multi-storey flats'.⁹

In two-storey housing, the two-pipe system is found to be slightly cheaper in capital cost than ventilated one-pipe plumbing; but the former is open not only to the objection of the health hazard in the gully and hopper head, but also in winter, to liability of freezing of the wastes from dripping taps and of freezing and possible bursting of traps by icy winds blown up the waste pipes. In assessing costs, the fact that the two-pipe system needs two branch drains connecting to the main drain whereas the one-pipe system needs only one, must not be overlooked, but in two-storey housing two branch drains are generally necessary in any case, because the kitchen sink is generally an isolated appliance remote on plan from the remaining appliances and therefore needs a separate branch drain anyhow. Of course, the single stack system in two-storey housing is the cheapest of the three, but it imposes the restriction of suitable location of appliances.

In multi-storey building, the one-pipe system has every advantage, including cheaper capital cost, and including one that is not always appreciated; it gives the designer much greater freedom. It must be borne in mind that branch pipes should be short and the situation frequently arises where, to prevent their being long, a second stack is required. If both soil and waste fittings can be connected to each of the two stacks of a two-pipe system, we have obtained that second stack without extra cost but have changed a two-pipe system into two one-pipe systems; this is a back-handed way of illustrating the economy in the one-pipe system.

The single-stack system, where it may be adopted, is the cheapest of all, in multi-storey work as well as in two-storey housing, for it has no trap ventilation pipework. Experience of the system in everyday use in multi-storey buildings is not yet extensive. Where location of appliances permits its adoption it functions satisfactorily, but in operation it is not so quiet as a fully ventilated one-pipe system which in the circumstances would be its alternative.

On the credit side of the two-pipe system are its particular defence against

ingress of drain air and the impossibility of discharging a soil appliance into a waste appliance; but, with proper design, both points are adequately taken care of in the one-pipe system. Complete blockage of a stack, which should result only from misuse, is disastrous in both systems and, however repugnant the idea may be, it may be thought preferable to have the storage capacity of a bath which may be available on the one-pipe system, to reduce the amount of flooding on to floors that in the two-pipe system might result pending the discovery that blockage exists.

Pipe sizing depends on the number and type of appliances, the rate of discharge of the appliances, the extent of their use, the probability of simultaneous discharge and to some extent, particularly in the larger diameters (say four inches upwards), on the gradient of horizontal branches.

Discharge units have been given to the appliances and tables have been prepared, in terms of these discharge units, giving pipe diameters for any given loading and taking into account all the factors mentioned above including the risk of simultaneous discharge. Both in American tables and our own, this risk has been taken as one per cent, which means that the pipe diameters given are adequate to carry the flow from X appliances, X being such that more than X appliances will probably not be found discharging simultaneously more than one per cent of the time.

Code of Practice, *C.P. 304 (1953)—Soil and Waste Pipes*, gives a table of discharge units and pipe-sizing tables based on these units which were prepared by the Building Research Station of D.S.I.R., and which should be consulted by the designer of plumbing systems; in this element of the design there is no distinction between two-pipe, one-pipe or single-stack system.

As to pipe layout, the overriding desirabilities are shortness, straightness and drainability. Compliance with these will promote, among other things, close grouping of appliances, absence of offsets and arrangement of pipe junctions to prevent cross flow from one appliance to another.

The invention of 'Perspex' and of tubing made of this material has given us facility for observation of flow in pipes denied to past workers. It was useful, for example, in determining the limiting gradients and lengths of branches of the single stack design; among other things it aided timing by photography. With it has also been observed the violent turbulence of discharge from ranges of lavatory basins at peak usage which suggested scouring rather than depositing action. It is the practice to fix traps immediately next to basin outlets so that there should be the shortest possible length of untrapped waste pipe, but, with this observed scouring action, it was considered that no deposit could remain in the branch pipe to cause malodour. The Ministry of Works has put this to the test by installing trunk wastes to ranges of lavatory basins in offices, workshops and the like to an experimental extent in different parts of the country. This so-called trunk waste is one where untrapped basins in ranges discharge to a common branch waste which is isolated from the stack by one master trap. Eighty-two of these have been installed since 1952, 25 of which are for ranges of from five to 13 basins; and in no case has inspection revealed any suspicion

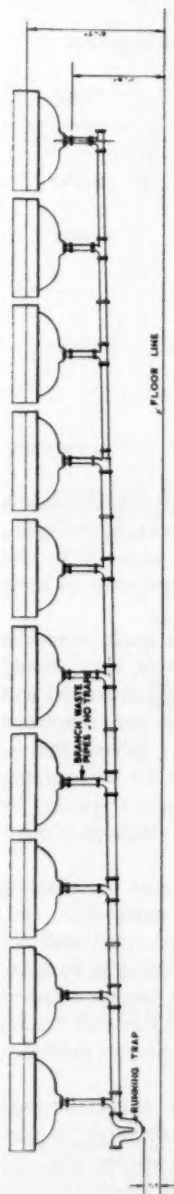


FIGURE 3.

of malodour, nor has there been in these four years any kind of complaint from users. A point to be noted is that the master trap is secured against loss of seal from self-siphonage by the long-trailing discharge of the emptying trunk waste. This is no new development, it is in fact a revival of an abandoned past practice, but it is here being applied only to lavatory basins, appliances which empty quickly. It saves costs by omission of traps, branch venting and quite a number of joints, and increases rate of emptying for, hydraulically, traps are an impedance. These trunk-wastes are not recommended for ranges of sinks or other appliances which empty slowly and which may promote dirty waste-pipes. Another modern development of an existing practice is washing under sprays at basins in office and public buildings. This has been a provision in factories where washing-troughs and washing fountains have been fitted with spray taps for some years, but from which no information regarding economy appears to have been obtained. As an experiment, and with the knowledge that shower baths showed considerable economy of water and fuel when compared with slipper baths, the Ministry of Works changed normal hot and cold water supplies over to a blended supply delivered through spray taps to a range of basins in a men's lavatory and in a women's lavatory in an office building; but in each case they kept one basin on normal supply, and they removed plugs from the basins having spray taps. This washing under running water had medical backing and this preliminary experiment was to obtain user reaction. This turned out to be favourable, and it was found that a rate of supply of three to five pints per minute of the blended water gave satisfaction, which indicated a considerable saving of water and of fuel. With the assistance of the Building Research Station a fully detailed experiment was put in hand involving the installation of water meters to hot and cold supplies in all lavatories in the building, whether on normal or spray tap supply, and electrically wiring the taps to recorders. The results over a year's working were obtained, and these show that, compared with normal taps, only half the water is consumed when using spray taps, and the saving of fuel also is substantial. The quantities of water used only for ablutions in this one office building per week were:

Type of supply	Water consumption in gallons		
	Hot	Cold	Total
Normal hot and cold supplies ...	16,000	6,000	22,000
Spray taps delivering water at 105°F.	7,000	4,000	11,000
Saving in water	9,000	2,000	11,000

This amounts to a saving of over 570,000 gallons of water per year in only one of London's buildings.

An interesting point concerns the larger saving in hot water; much of this is attributed to the loss of heat, which, in normal supply, is taken up by the basin, attributed to the loss of heat, which, in normal supply, is taken up by the basin, and which was shown to reduce the hot water temperature by some 10° Fahrenheit.

The adoption of this system for office and public buildings would introduce savings additional to water and fuel. A simpler basin is possible, there should be no plug, chain and staple, and there is no need for the controversial and unhygienic overflow. Service piping may be smaller, for we are here concerned with a delivery of four to five pints per minute in place of 3½ gallons, that is, 28 pints per minute, from the two taps of normal supply. On the waste piping side, not only may pipe sizing be reduced but branch venting to traps may be omitted if the traps are secure from syphonage induced by the discharge of other appliances.

With this system trunk wastes could not be considered, because the trickling discharge from the sprays would be insufficient to keep the wastes clean; and, in place of drinking fountains, small drip sinks should be provided with hot water supply, as well as the cold drinking supply, for the washing of tea-cups, and (it is understood), the washing of silk stockings that have become splashed with mud. A paper by J. Crisp and A. Sobolev of the Building Research Station giving an outline of the above experiment together with its results was published in the 1956 issue of the R.I.B.A. *Journal*.¹⁰

A user comment drew attention to the fact that everyone might not want water at the temperature given by a master blender. A manufacturer has now produced a spray tap which in one turn of the tap head mixes hot and cold supplies from unmixed cold to hot so that temperature of the supply is in the control of the user. The system with taps of this kind has been installed as

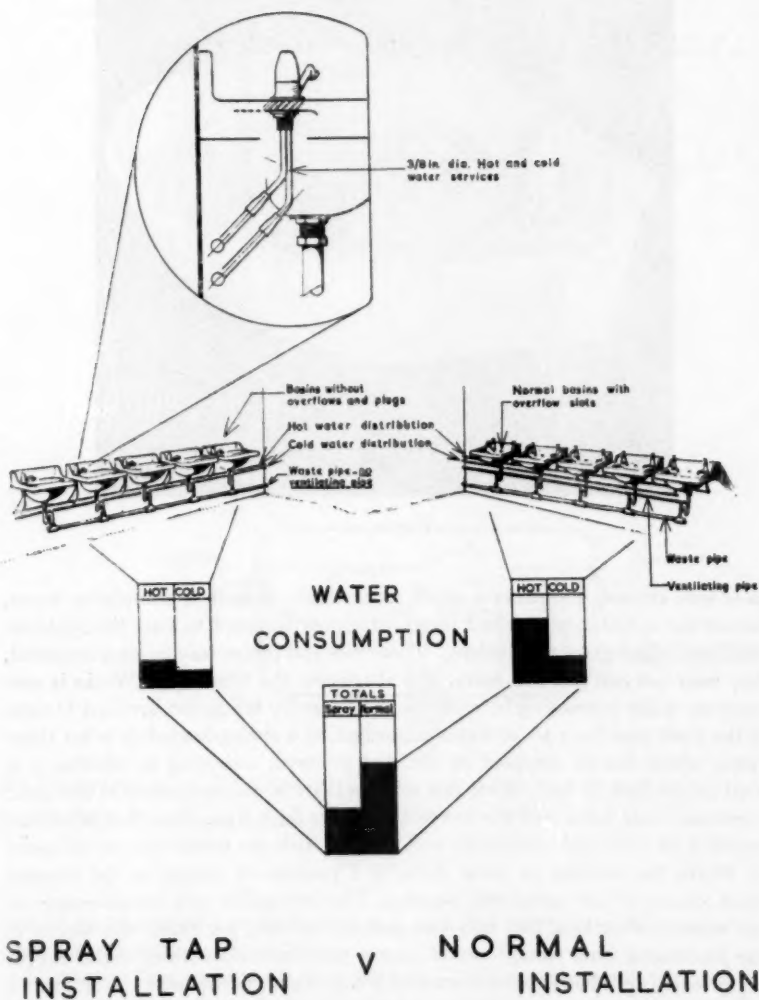


FIGURE 4.

a permanent feature in an office building, and very laudatory things are being said of it by the users.

Another development which may be of interest, though 'developing' might be the truer word, concerns the flushing of w.c.s. The present arrangement,

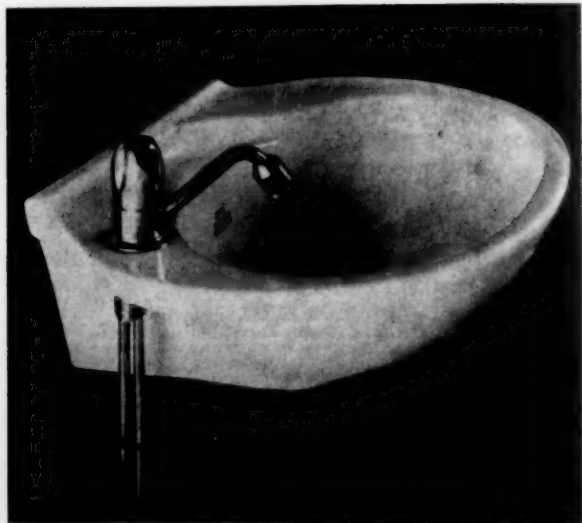
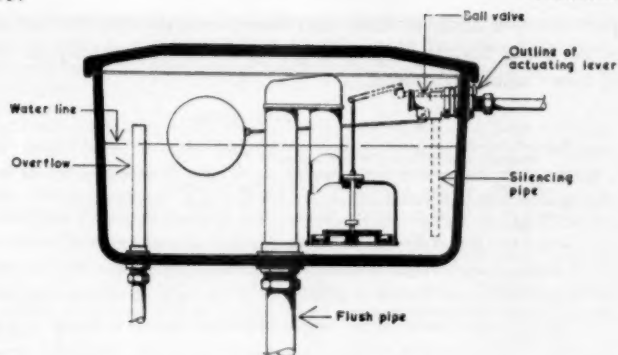


FIGURE 5.

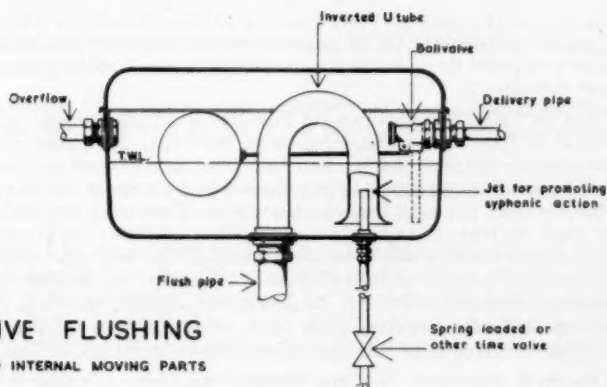
as is well known, comprises a small tank which, as well as containing water, houses the cylinder, piston and levers which are actuated to start the syphonic discharge which gives the flushing. These bits and pieces may become corroded, they wear out and they are noisy. The alternative the Ministry of Works is now studying is the promoting of syphonic discharge by filling the inverted U tube of the flush pipe by a jet of water controlled by a spring-loaded or other time-valve, which can be operated by the foot or hand, according to whether it is sited in the floor or wall. With this scheme there is no mechanism in the tank: it contains only water and the inverted U of the flush pipe. Two that have been installed on trial work excellently and silently with the result that the Ministry of Works has decided to instal them as a permanent feature in the hospital block of one of our consulates overseas. The two-gallon tank would ensure to our water undertakers that only two gallons are used per flush; the supply to the jet coming from storage would ensure that contamination of mains supply is prevented; all that remains is to find a time valve, economical in cost, which will satisfy the water undertakers.

In the space of a permitted 5,000 words, an attempt has been made to deal with the subject comprehensively; this has been made possible by relying on the reader to refer to the official publications named. It will be recognized that there is much else falling within the scope of this subject which has not been touched on: water supply and distribution, materials, jointing and fixing are among such items.

An attempt has been made to outline some modern developments, to find



TYPICAL FLUSHING CISTERN



ALTERNATIVE FLUSHING METHOD

NO INTERNAL MOVING PARTS

FIGURE 6.

that 'there is nothing new under the sun', and that 'developments' means new applications of existing knowledge.

An attempt has been made, it is hoped with some success, to convince all parties to the construction of a building that plumbing services should be carefully planned into the building at an early stage in design. It will be obvious to all, that skill in design will be wasted if installation does not conform to it. Inspection and testing should be carried out by technicians competent to do so during the course of construction, and their final satisfactory reports should be received by the architect before buildings are handed over for occupation.

There remain my acknowledgments: first of the willing services of manufacturers who, often quite altruistically, work on designers' proposals to make them successful; then to the Ministry of Works for permission to quote

particulars of some of their installations and internal instructions; and finally to the Royal Society of Arts for giving me the opportunity for the presentment of views herein expressed.

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DISCUSSION

MR. H. E. CAMPBELL: Of course, overflows are unsanitary and we have a long way to go to improve them, but surely overflows are more a safety precaution than one of pure sanitation?

THE LECTURER: You have jumped on a controversy that has been going on for years, ever since I have known anything about plumbing. Antagonists to overflows argue that practice demands that we fit a trap immediately below the basin so that there shall be the shortest possible length of untrapped waste pipe, the aim being to exclude from the room the smell from the waste pipe. Then every time we sluice our faces, we place our noses immediately over this filthy overflow; this is particularly so with the slot-type overflow which cannot be cleaned. The weir-type overflow need not be so unsanitary because it can be cleaned. What does the overflow give us in compensation for this disability? If the taps are left running fairly full, the overflow will not cope and water will flood on to floors. Dirty overflows—and types which cannot be cleaned become dirty—are quite inconsistent with the aim of sanitary science.

MR. W. M. COLLINSON: For long enough it has been a principle of those concerned with making taps for the delivery of water to insist on two and a half complete turns from full shut to full open; it is almost an article of faith with the water undertakings. The design of the tap shown and described by Mr. Ackers was described by him as opening fully, for both hot and cold supplies, in one turn. Can Mr. Ackers tell us what has happened to the article of faith?

THE LECTURER: In the two and a half turns you are shutting off from two gallons (that is 16 pints per minute) down to nought. We are shutting off from three pints a minute down to nought. I think in your two and a half turns, by the time you have reduced to three pints a minute, you would not have one full turn left.

MR. E. E. MORGAN: I live in a block of flats, and next to and above my bedroom are w.c.s. It would have simply been a matter of careful design on the drawing board to eliminate that, yet it still happens to-day. I have plans through my hands showing to-day w.c.s placed next to the best bedroom in the flats adjoining, and the soil pipes coming down at the side of the bedroom wall. Surely that is not necessary?

Mr. Ackers has quite rightly commented on the necessity for free-flowing traps holding an adequate seal, and yet one can go to-day to within half a mile of this

building and buy cast brass traps as rough inside as a plumber's rasp, and they hold perhaps half an inch seal at the most. When, at the recent Building Exhibition, I pointed this out to a builders' merchant on a stand, he almost threw me out of the building.

One other point concerns the bye-laws to which Mr. Ackers referred. I am a Public Health Inspector, and I find it very difficult in London to-day when a builder or architect comes to me and says, 'I want to use this single-pipe system of plumbing'. I have to tell him that officially it is not lawful, yet the London County Council are using it themselves. Can the lecturer, or anybody here, hasten the publication of the new London County Council bye-laws governing this one-pipe system? It will help me and my colleagues enormously. I am all for it personally, and I think it is a splendid system. Incidentally, it is nothing new; I was using it some 26 years ago. It is a very efficient system if it is designed and erected properly, but it is still not allowed by law.

THE LECTURER: The Ministry of Housing Model bye-laws permit it, and I think that is a model for adoption by local authorities.

MR. MORGAN: It is still not permitted under the London County Council bye-laws.

THE LECTURER: The bye-laws have to be reviewed every ten years. If cognizance is taken of the model and the new bye-laws are based on the Ministry of Housing Model bye-laws, then you certainly will be able to permit it.

MR. MORGAN: I believe I am right in saying that there are certain local authorities in London who still will not permit the use of the new single system. Lambeth is not one of them.

THE LECTURER: I do not know of a bye-law which says it shall be used, but on the other hand, I do not know of one which says you shall not have it.

MR. H. WEALLEANS: I am appalled by the number of cast brass bath traps of one-and-a-quarter inch internal diameter. This is reduced to one inch in practice, and further reduced by its ragged interior. Secondly, I had hoped that Mr. Ackers would have made some reference to flush valves. I had always hoped to see flush-valves being sold; then I finally saw one in operation, and I should say that a minimum of eight gallons flushed down into the pan.

THE LECTURER: There are two reasons why water undertakers, who are short of water and have to conserve it, will not have them. The first is that one cannot be certain that they will deliver no more than the measured quantity of water for which they are set; nor is it certain that in some circumstances they will automatically close. The second reason is that in automatically closing, a pulse, a percussion is sent right through the pipes; I have seen, in a water undertaker's testing laboratory, the needle of a pressure gauge go right up past the twenty pounds per square inch mark as one of these valves shut off.

I think an advance would be made if an overflow device could be incorporated into the valve which would act as a tell-tale. Perhaps Mr. Collinson could add something to what I have just said.

MR. COLLINSON: A number of water undertakings have recently carried out protracted experiments to see whether flushing valves could be trusted. One of them has a number of makes of valves on test at their water works, and they have mechanically operated them through a cycle that they are satisfied represents twenty years life, and most of the designs they operated on like this stood up to twenty years

of life. They are cramming all that into a very short space of time, though, and I do not believe that it is a conclusive test.

A more realistic test has been made by another water undertaking. The Water Engineer put a metered valve into his own private w.c. compartment, and set the valve to flush two gallons. He succeeded every time the handle was pulled and in this test, carried on over a period of nearly two years, he got an average plus variation of two-tenths of a gallon.

That is not quite good enough, because the Water Act says plus or minus five per cent for the ordinary three gallon cistern; but it does prove that these valves do not waste water in what must admittedly be rather ideal circumstances in a water engineer's own house. They are not new; flushing valves have been shown in one maker's catalogue for sixty years. The principle on which most of them operate is the well-known one of the dash pot and it remains unchanged to-day. It has this disadvantage, that if anything breaks down, the valve opens. That is something that is waiting for some inventor to turn inside out. If we could devise a valve that would stay shut if anything went wrong, then I think it would remove all the objections of the water undertakings.

They are used in this country. Liverpool has always allowed flushing valves. They have a copious supply of water admittedly, but I do not think they waste it. Certain other water undertakings nearer London—East Surrey is one of them—allow them, and I do not think they have a lot of water to waste, situated as they are in a fairly densely-populated part of the country. I believe flushing valves ought to be given more of a chance to prove their worth.

MR. G. J. FINNIGAN: Can the lecturer tell me if, in a one-pipe system of plumbing in a block of flats, there is any disadvantage with an 'S' type pan as compared with a 'P' type pan?

THE LECTURER: In my view there is an advantage in the 'S' trap. I prefer the w.c. connection to be below the bath waste connection.

MR. FINNIGAN: Is there more possibility of pull? It is not unvented. Is there no more possibility of the pan emptying?

THE LECTURER: No, Sir.

MR. FINNIGAN: I mean, preferably in the case of an 'S' trap rather than a 'P' trap.

THE LECTURER: An 'S' trap will assist you in getting connection to the stack from the w.c. below that of the bath waste but, of course, there is a multi-branch fitting which has been designed and which ensures the correct connection of the bath waste to a cast-iron connector suitable for a 'P' trap w.c. connection. I believe you said it was fully vented?

MR. FINNIGAN: Yes.

MR. R. B. ADAMS: What is the advantage of this system of flushing whereby water is blown over the U tubes starting the flush, instead of pulling a handle? Mr. Ackers mentioned flushing valves as getting over that but it did cause water hammer. Surely this system would cause water hammer too, and also there must be some sort of automatic or time valve and this is liable to leak or to fail to shut off, and is just as liable to over-flush.

THE LECTURER: The object is to get rid of all those bits and pieces in the flushing tank, and it gives a very silent and positive action. The building contractor who installed the two which we were going to test out in this country before installing them abroad was so pleased with them that he got one for his own house. It is quite silent.

Now the point about the valve. I have already had a chat with a very helpful colleague of Mr. Woods, and he feels that if this valve—let it be, say, a three-way valve—can have an overflow incorporated in it, so that if it should stick and the water continues to flow, then the wastage will be obvious, I shall satisfy him. He says if a ball-valve sticks or leaks through wanting re-washing or for any other reason, the overflow is the tell-tale and if the same can be done by means of an overflow with this valve, then he is prepared to accept it.

MR. ADAMS: Is it not rather expensive to install? It means two supplies.

THE LECTURER: No, it does mean a bit more piping. Whether the valve would be expensive or not would depend on the alacrity with which it is adopted. You ought to be able to tell me. They would reduce in price as more were produced, would they not?

MR. ADAMS: I was thinking that the installation costs would be high, you would need a supply across the top.

THE LECTURER: There is a bit more service pipe. It can be a branch off the supply to the flushing tank.

MR. S. JENNINGS: Could Mr. Ackers say why Codes of Practice and many other authorities on plumbing design show the discharge rate into a flushing cistern as being one gallon per minute, when many regulations require that the cistern shall fill in minutes? Obviously such a goal is by means of a ball valve, then as the ball valve rises, although you may get one gallon per minute in the first minute, you cannot get a gallon in the second. Now following on from that I wonder whether there is going to be a certain disadvantage in the type of amendment to a flushing cistern suggested by Mr. Ackers. It seems to me that in the filling of the second half of the cistern, the time lag is going to be almost the same as with the normal two-gallon flushing, and I believe the object is to cut down the time in filling the cistern and not to save water. If that is the case then there will be probably a half-a-gallon discharge by that supposedly one-gallon flush from the top, and there may eventually be some dissatisfaction from the point of view of service. I would like Mr. Ackers to tell me if he has any actual experience of the use of this cistern?

THE LECTURER: I have not had the facilities for testing the time of filling the second half of the cistern. You are right in saying a ball-valve fully opened discharges at a higher rate than when it is shutting.

MR. JENNINGS: Many water authorities now quote the British Standard Specification in their clause dealing with the filling of flushing cisterns, although the Metropolitan Water Board stated for some years in their Bye-laws: 'The period for filling shall not exceed two minutes'. It still shows the discharge rate into the cistern as one gallon per minute in the Code of Practice table.

THE LECTURER: The Codes of Practice come up for revision every five years, and it is important that this should be known. If you will send any amendment that you think should be incorporated in any Code to the British Standards Institution, 2 Park Street, London, W.1, it will go into the bag, and at the end of five years will come up for consideration by a Standing Committee and may be incorporated. This is important anyhow, but particularly so in view of the tendency to incorporate Codes of Practice into Bye-laws. I do think it is a thing you should do.

MR. JENNINGS: I stressed that last point because, as I am at a school of building, I have many students going through my hands and I endeavour to impress on them that more than one gallon per minute is required. One of the students who, at the

time was assistant manager to a well-known London firm of plumbing contractors, put my recommendations into effect and was subsequently taken to task by the customer's quantity surveyor for oversizing the distribution to the flushing cisterns. On going to a third party for a decision, he lost because his design figures showed greater discharge rate than that required by the Code of Practice.

MR. L. J. GRIFFIN: I have often wondered why there has been no progress in substituting for the ball float in the cistern the diving bell method of open-ended pot and direct valve, which is obviously much cheaper to manufacture.

THE LECTURER: I am afraid I do not know.

MR. H. LESLIE EGERTON: I may be able to help the questioner. I think he is referring to what is commonly called the 'Burlington' Water Waste Preventer or Cistern, but a ball valve is still an integral part of its mechanism. They are certainly cheaper than those shown by Mr. Ackers, but the mere fact that they are so noisy in operation is the reason for the lack of demand these days.

MR. C. L. LANGSHAW: Mr. Ackers has mentioned the growing practice of writing into bye-laws references to Codes of Practice. The Code of Practice concerned with plumbing describes the three systems which Mr. Ackers has explained to us this afternoon, but it is not made clear, when that Code of Practice is referred to in the Model Bye-laws, which system a local authority is expected to approve. Since the bye-laws themselves are so vague in their requirements, it follows that the local authority is going to be the final arbiter as to which system may be used in any given set of circumstances. It might be possible for buildings of a similar plan and purpose, built on two sides of a road but under two local authorities, to be done on different systems because the authorities had different views. In these circumstances it seems to me that we are going to require a much higher standard of training and experience on the part of those officers of local authorities who examine and approve schemes, in order to ensure that their judgment is based on up-to-date knowledge.

I wonder if Mr. Ackers feels that local authorities' inspecting officers are up to the standard we should expect, in view of the wide discretion they are permitted?

THE LECTURER: I pass.

MR. H. E. CAMPBELL: I do not think that any attack on local government officers should be allowed to pass. I happen to be one, not of a local council but of the City of London, and we are not, and I am only speaking for my own colleagues, advising any particular system. We only advise when we find that work does not comply with the bye-laws as they stand. Of course, Mr. Ackers made the point perfectly clear in his paper, that if you do design your work, or make arrangements for the work to be designed for you, by approaching the local authority as to what they would or would not like, then you would not have much trouble at all. Of course, if one puts down a hairbrained scheme on paper, and then wants to fix it just as the job is under way and then something goes wrong, you cannot really blame the local government officer. His hands are really very much tied indeed and limited very definitely to the rules and the law. As a rule we try to get over it as easily as we can.

THE LECTURER: The reason I replied to Mr. Langshaw by saying 'I pass', was because Mr. Langshaw knows I serve the Ministry of Works, and Mr. Langshaw also knows that the people concerned with bye-laws and local authority procedure are the Ministry of Housing and Local Government; and it is not for me, an officer of the Ministry of Works, to answer questions which properly should be addressed to the Ministry of Housing and Local Government. I still pass!

MR. LANGSHAW: The purpose of my earlier remarks was to draw attention to the fact that, for instance, the present London County Council drainage bye-laws, dated 1934, give considerable detail as to the requirements for various systems—sizes of pipes, depths of seal for traps and so on—but that the new Model bye-laws, which are the basis upon which local authorities' bye-laws over the country as a whole are produced, are very vague on what should be done. It seems to me that as a result a considerable amount of discretion is being passed on to local authorities' officers. I agree that they can only authorize what their bye-laws permit, but I am rather concerned by the fact that the bye-laws do not necessarily tell them what is permitted, and it therefore becomes a matter for their discretion.

MR. EGERTON: Might I recommend that they 'put the blind eye to the telescope', as the late Dr. Charles Porter did for many years and got away with it!

MR. E. E. MORGAN: Mr. Langshaw's remarks on local government officers in the Public Health Inspectorate being qualified to tackle their job, as architects and others are, has my wholehearted support. Perhaps in the past, due to circumstances over which none of us had any control, there were deficiencies—I refer to the quick courses that were devised during the War—and there are a very few young inspectors to-day who are not fully experienced, but not many. Both Mr. Langshaw and Mr. Ackers themselves are privileged people. They do not come within our purview. But I know perfectly well from past experience that the standards they set are as high as any that we would require. If all work was of an equally high standard we would have a very easy job.

I do not know whether reference to the Ministry of Housing and Local Government by Mr. Langshaw can do anything to get this state of affairs corrected, in which the L.C.C. Bye-laws still do not make this new system legal, but we want that put right as soon as possible.

A vote of thanks to the Lecturer was carried with acclamation; and, another having been accorded to the Chairman, the meeting then ended.

THE WEST INDIAN FEDERATION

A paper by

SIR HILARY BLOOD, G.B.E., K.C.M.G., M.A., LL.D.,

*formerly Governor of Barbados, and Governor and
Commander-in-Chief of Mauritius, read to the
Commonwealth Section of the Society on Thursday,
28th March, 1957, with Sir Selwyn Selwyn-Clarke,
K.B.E., C.M.G., M.C., M.D., F.R.C.P.,
Chairman, Commonwealth Section Committee,
in the Chair*

THE CHAIRMAN: Most of you here must be well acquainted with Sir Hilary Blood, either personally, or through his enjoyable broadcasts in the B.B.C. Overseas and Home Services. Sir Hilary has earned high distinction in the academic field, and during his 35 years of service to the Commonwealth overseas he has had bestowed upon him by the Sovereign several high honours; but those are not the reasons why the Commonwealth Section of this Society invited Sir Hilary to address you this afternoon.

In 1930, after ten years in the political administration in Ceylon, Sir Hilary was appointed Colonial Secretary in the West Indian Island of Grenada. I am glad to be able to welcome some Grenadians here this afternoon. During his four years tenure of office, the Ferguson Commission for Closer Union in the British West Indies held its sessions. After holding the appointments successively of Colonial Secretary of Sierra Leone and Governor of the Gambia, Sir Hilary was appointed as Governor of Barbados and so went to the West Indies for a second time. You may, perhaps, recall that that was the period from 1947 to 1949, when the Montego Bay Conference was sitting, all the British West Indian islands being represented with the exception, I think, of the Bahamas. Following upon the valuable work of that body, presided over by a very able Secretary of State for the Colonies, the Right Hon. Arthur Creech Jones, the Standing Closer Association Committee came into being with Sir Herbert Rance, later Governor of Trinidad, as its Chairman. The duty of this Committee was to draft constitutional and administrative proposals leading up to Federation. In 1955, after his governorship of Mauritius, Sir Hilary returned to the West Indies for a third time at the request of the Secretary of State for the Colonies. He was one of the three Pro-Federation Commissioners responsible for working out the details of financial, judicial and civil service matters involved in the Federation Plan. So you see, Sir Hilary has been in a unique position to study West Indian problems; and not in the depths of a comfortable chair at the Athenæum, but actually on the spot. I am sure you will agree that he is particularly well equipped to address this meeting.

Now, you may be asking yourselves what concern constitutional affairs in the West Indies are to the Royal Society of Arts, a body established over 200 years ago for the encouragement of arts, manufactures and commerce? My answer is to ask you to take your minds back to post-war period, which has been characterized by a veritable upsurge of nationalism and the desire for independence. India, Pakistan, Burma, Ceylon and Ghana have all received their independence in the last ten years; and, as you are aware, Malaya, Singapore and certain African territories are on the

verge of receiving it. Ever since the original idea was mooted by Mr. E. F. L. Wood (now Lord Halifax) in 1922, there has been talk of West Indian Federation. It is quite understandable that an insistent demand for self-government and independence should have been stimulated by the constitutional changes in Asia and Africa. But several of the West Indian Islands are non-viable economically. And although it is as true to-day as it was nearly 2,000 years ago that man does not live by bread alone, political independence would be of little use to him without bread, shelter, clothing, work and leisure. Last year, to cite but one example, the West Indian island of Montserrat would have been quite unable to make ends meet without a gift from Great Britain of £103,000. Generally speaking, the West Indies are examples of what is called a mono-cultural economy. And if the low standard of living is to be raised a great deal of economic planning on a big scale, combined with a diversification of products and of secondary industries is called for. Transport has been an obstacle to commerce in the past. And I would remind you that a ship is part of the crest of most of the West Indian Islands. There are nearly 1,200 miles of sea separating Trinidad, situated on the south-east side, from Jamaica to the north and west. Here, no one island administration can solve the problem which requires the co-ordinated and centrally directed efforts of the whole group. Education to rid the islands of that consequence of slavery, the identification of class with race, must be all-embracingly planned to fit the inhabitants for improved agriculture and industry and, may I add, self-government. The pressure of population varies from 4.7 per person per square mile in British Guiana to 1,246 in Barbados. Immigration and emigration are yet other matters for overall planning. Now I have mentioned these few points as a justification, if, indeed, one is needed, for the choice by the Commonwealth Section of the Society of the important subject of to-day's address. And now, Sir Hilary, I am going to invite you to tell us what we ought to know about the Federation of the West Indian territories.

The following paper was then read:

THE PAPER

We are well accustomed in this country to finding in some form of federation a solution to constitutional problems thrown up as British dependent territories advance towards responsible government and independent sovereignty. Canada and Australia have found the consummation of adult status in the Commonwealth by travelling along the federal path; so might South Africa if the Act passed for the purpose in the '80s had been brought into effect. Nigeria and Malaya have federal constitutions, and in 1953 the Central African Federation came into existence.

Now we are in the process of creating another federation—the British Caribbean Federation—known simply as the West Indies: a unique and exciting linking together of some of the loveliest islands in the world in a federal structure based on Trinidad. It is of this federation that I am to treat in this paper. And when we have considered this latest adventure in constitution making in its setting and against its background we shall, I hope, be able to form some opinion of how the activities in which this learned Society is particularly interested may be affected by the new arrangements.

May I begin by reminding you of a few very elementary geographical and historical facts relating to the West Indian countries. Excluding Bermuda and the Bahamas, which are away to the north near the Tropic of Cancer, and

hardly form part of this area at all, the British Caribbean dependencies lie on an east/west axis some 2,000 miles long from British Honduras in the Central American mainland to the British Virgin Islands, and on a roughly north/south axis about 1,000 miles long from the Virgin Islands round the bow of the Lesser Antilles to British Guiana on the mainland of South America. Over this huge area of sea, more than a million square miles of it, the islands lie as though scattered from a flour dredger by a giant hand. We in this country have always spoken and thought of the West Indies as a place and West Indians as a people—both ideas are novel in the Caribbean: and it is important, in trying to indicate the problems which the establishment of a federal set-up presents, to begin by emphasizing the scattered nature of the units to be combined.

Next let us consider the diversity of the islands' history, and the various sources from which their inhabitants were originally drawn. Columbus, looking for a new route to India and China and, it is said, surprised that he found no Mandarins in what we now call Cuba, opened a new world not to Spain alone. The Spaniard, the Dutchman, the French and ourselves went through many of the islands with fire and sword—their hostility directed not so much against indigenous inhabitants, of whom there were few and they not of great account as foes, but against each other. The European wars of these centuries were fought on both sides of the Atlantic. And to the inter-island antagonism thus created must be added naval and piratical action at sea, frequently barely to be distinguished, thus making the ocean a place of terror, an added barrier to communication, not a link. Meanwhile to the *mélange* of European peoples were added slaves from Africa, and indentured labour from India. Here, indeed, are the makings of isolationism and fierce egocentricity. It is not perhaps surprising that regional thinking has been a slow growth, that a hundred years or so of talk about federation have only recently been translated into action. Indeed, the marvel perhaps is that there is to be federation at all. Let us look now at the influences which have overcome these centrifugal forces, and consider the arguments which have led such widely separated lands and narrowly self-centred people to ask to be bound together in federation.

Originally federation was conceived primarily as an economy measure. It was thought that a centralized political organization might be devised which would allow units to adopt simpler and less expensive forms of government. Caribbean Colonies, however, showed no willingness to modify their constitutional structure in such a way as would reduce expenditure. Indeed, later constitutional developments in advance of federation, in particular the introduction of the ministerial system, have greatly increased the cost of government and federation will increase it still more.

But it has also long been clear that the Caribbean territories present a number of common, or at least parallel, internal and external problems, mostly economic, which can be solved on a regional basis only. For example, no unit can afford from its own resources expert staff equipped to deal with, say, agricultural research or social problems. To obtain the services of the appropriate experts you must bid in the world's human markets. Hence such institutions as the

Imperial College of Tropical Agriculture, the University College of the West Indies, and other centralized expert organizations.

Similarly as regards external economic problems. The voice of one little island of a few thousand inhabitants is hardly heard in the clamour of world argument and negotiation in commercial matters, and joint action in economic and related subjects is slow and difficult unless there is a centralized organization. But the voice of a Federal Government representing 2 or 3 million people is a loud clear call, quickly raised, and demanding attention.

That these early arguments in favour of some form of federation remain strong and cogent to-day is evidenced by the recent growth of regional bodies such, for example, as the Regional Economic Committee, the British Caribbean Air Transport Advisory Council, and the like. Though hampered by the need, in the absence of a federal set-up, to refer back to the unit Governments, and on occasion frustrated by irreconcilable local views, these organizations have done valuable work, not least in applying a stimulus towards a pan-Caribbean outlook.

The year 1945 saw a further development in the concept of the federal idea. The late Colonel Stanley, then Secretary of State for the Colonies, stressed the importance of federation in relation to local political and constitutional advance. In general the British Caribbean territories are too small ever individually to achieve sovereign status. It is self-evident that lands the size of, say, the Isle of Wight, or with populations measured in five figures only, can never be sovereign states. The most that they can hope for is a large measure of internal self-government: defence, security, foreign affairs and finance remaining matters ultimately the concern of Her Majesty's Government in the United Kingdom.

But a federation of roughly 3,000,000 people is another matter. An official report observes: 'independence on a unit basis (is) a mirage. Independence . . . as a federation is a practical possibility.' And in a federal set-up the political leaders of the West Indies may find the scope and opportunity which will lead to full political status and maturity.

There remains a final argument, emotional perhaps, but of great cogency. Various influences—the impact of the Second World War, improved inter-island air communications, the work of the Regional bodies—have begun to awaken among West Indians a conception of themselves as West Indians, not merely as Jamaicans, Vincentians, Barbadians, and the like. The idea is growing of a wider allegiance than to the few square miles of the country of birth. A West Indian nation is emergent, and many West Indians see in the proposed federal Constitution the outward and visible sign to the world of this new idea of themselves. Federation is the standard and token of their grown-up national status.

Agreed proposals for a federal Constitution have been worked out and agreed to by the Governments of Jamaica, the Leeward Islands, the Windward Islands, Barbados, and Trinidad. British Honduras and British Guiana will not be original members of the Federation. Their Governments have, however, kept in very close touch with all negotiations at every stage. Their observers at the various

conferences regarded with sympathy the aims of federation and were impressed by the fact that delegates took care to see that the federal Constitution made provision for the easy admission of British Honduras and British Guiana to the Federation, should they wish to join at some later date.

The main Constitutional proposals may briefly be summarized as follows: The Federation is to follow broadly the Australian model: that is, the constituent units retain complete control over all matters except those specifically assigned to the Federal Government. This arrangement is secured by the provision of two lists, an exclusive list and a concurrent list, which cover two fields of legislation, one wherein the Federal Government only can legislate, and one in which either the Federal Government or the unit can legislate—the federal legislation, if any, automatically prevailing. The exclusive list contains such subjects as: defence; exchange control; external affairs; federal public services and statute laws; federal elections; loans; and so on. The concurrent list contains, among some forty subjects, agricultural education; advisory services; aliens; banking; census; land communications; lighthouses; postal services and revenues; shipping; trade and commerce; the University College of the West Indies; weights and measures. Outside these two lists all legislative power remains, as at present, with the unit Legislatures. This restriction of the activities of the Federal Legislature refers to legislation only and does not mean that the Federal Government must not, or will not, be concerned in many important matters not in either list: education, labour matters, public health, social welfare, trade commissions, tele-communications, and many such subjects are matters which the Federal Government may well wish to bring within its sphere on a basis other than legislative.

For the conduct of federal affairs the proposal is that there should be a Governor-General, who exercises the executive power of the Federation on behalf of Her Majesty. He is advised by a Council of State consisting of the Prime Minister of the Federation, three members of the Federal Senate appointed by the Governor-General, and seven members of one or other Chamber nominated for appointment to the State Council by the Prime Minister. Three officials, nominated by the Governor-General, will, initially, attend State Council meetings, and take part in the discussions. The Federal Legislature is to be bicameral: a Senate consisting of 19 senators appointed by the Governor-General in consultation with unit Governors, one in respect of Montserrat and two in respect of each other unit of the Federation; and a House of Representatives consisting of 45 members distributed on a population basis among the units, and elected on the basis of existing unit franchise arrangements until the federal law otherwise provides. The Senate will elect its own President and the House of Representatives its own Speaker. The Prime Minister will be elected by the House of Representatives and the seven members of the Council of State appointed on the Prime Minister's recommendation will be styled 'Ministers'. The Governor-General is required, save in certain specifically noted matters, to seek for, and to act on, the advice of the State Council. Relationships between the two houses of the legislature are regulated as in the

United Kingdom. The Governor-General is empowered, with the advice of the Prime Minister, to assign to any Minister the responsibility for the administration of any Department or for the discharge of other administrative functions.

There is to be a Federal Supreme Court having original jurisdiction in specified federal or inter-unit matters. It will have jurisdiction to hear appeals from a single judge of this Court exercising its original jurisdiction, and from other federal courts if set up. The Federal Supreme Court will also have jurisdiction to hear appeals from unit Courts of Appeal, and recourse may be had to this Court by British Caribbean territories which are not members of the Federation.

Finally, as regards finance. During the first five years the Federal Government will derive its revenue from profits on the currency issue and from a mandatory levy, on strictly prescribed lines, on the unit Governments, less any sum which it may raise from customs and excise duties—both of which it will be given power to collect. Her Majesty's Government in the United Kingdom will make a grant of £1 million towards the initial cost of the federal capital, which is to be in Trinidad, and will continue for a time grants-in-aid of revenue shortages. Colonial Development and Welfare funds, if available, will continue to be applied to the area. So much for the agreed proposals.

The British Caribbean Federation Bill was enacted last summer: the draft Order in Council has been examined in the West Indies and will shortly come before Parliament: Trinidad has been selected as the site for the capital: the Governor-General will be appointed in the autumn of this year and the first federal elections will be held in the first quarter of next year. Then the new federation will come into being. It will not, as I have already suggested, be initially a sovereign, independent State, because Her Majesty's Government in this country will for some years have a final say in such matters as defence, finance and foreign affairs. But I do not think complete independence will be long delayed.

Her Majesty's Government in the United Kingdom can do but little more to help: it is for West Indians themselves to make a success of the new venture, and this will call for creative energy of the highest order. The British Caribbean people have this energy, and if they will use it and work for the benefit of the area as a whole, and not for individual bits of it, then much can be done to establish a strong central government. Thus powers and responsibilities, which have not existed before, can be placed in the hands of men to use 'according to their abilities and inclinations for the betterment of the region'. Thus, and thus alone, can a new West Indian nation take its proper place in the world.

Now how is this work of constructive statesmanship, this concept of a new nation about to emerge and finding expression in federal relationships, going to affect those activities in the Caribbean in which this Society is primarily interested?

So far as the arts are concerned, I speak very much as a layman and with the greatest diffidence. But there do seem to me to be two points of interest. First: the raising of the eyes of the artist—artist in the widest sense—to wider political and national horizons must produce fresh inspiration. Music, literature, painting

and sculpture in the West Indies are largely localized and island-bound. It is surely not too much to hope that we may in the future find the minds of West Indian artists fertilized by national rather than by local experiences and ideas. The second point is more immediate and very practical. A lot of money is to be spent in the near future in creating the new federal capital: on federal buildings—public buildings such as the Federal Supreme Court, accommodation for the two Houses of the legislature, government offices and the like—and also on houses for federal officials, ministers, and so on. It is to be hoped not only that local materials will be used, but that local architects, artists, sculptors and others will be encouraged to use their skill in designing and beautifying such buildings. The capital will be the shop-window: it must be a place of which West Indians are proud, typical of their history and tradition. Thus the Federation can well be the first and leading patron of modern West Indian building design and decoration. Here is a great opportunity—it must not be lost in a welter of North American reinforced concrete, standard-type, utility structures. I should like to see the soft Barbados coral, the coral that can be cut with a saw, used freely in the federal buildings, and the English Georgian designs, so generally adopted in the islands in earlier days, widely employed for federal housing. For West Indian commerce and manufactures the Federation should be able to do much.

Take commerce first—commerce in the sense of the internal trade of the region as well as of its export and import trade. There is much internal tidying up to be done; confusion which must be cleared away to free commercial channels at present clogged with the accumulated debris of years of isolationism and rusty from lack of *expertise*.

Five different colonial governments are concerned. Of these two, the Windward Islands and the Leeward Islands, are groups of islands each with its own individual government. Think of the effect of all this on Customs matters—on practice and on duty rates. A start was made some years ago to introduce a uniform method of Customs classification and layout. This is not yet complete. Duties vary from island to island depending on local needs and habits. Some islands—many of them—are largely dependent on import duties for their revenue. Others have alternative sources—oil for example in Trinidad, bauxite in Jamaica: there Customs duties are not so overwhelmingly important. This diversity of practice and imposts makes the importer's problems very great, and hardly helps the flow of goods into the area from outside. The creation of a Customs Union, which will provide internal free trade within the region, and supply a simple overall pattern of Customs regulations and tariffs to the rest of the world, is the first essential step towards clearing up this mess. The need is recognized and a commission is at work on the subject. It has a big job before it.

But it is not only in Customs matters that confusion exists. Postal rates and services also require a complete overhaul by an expert in such matters. Two years ago when we were discussing in the West Indies the question of federalizing the postal services I found some very curious anomalies. For example, Trinidad has not, or had not, a direct parcel post arrangement with Venezuela just across

on the mainland. Membership of some postal convention was missing. So parcels from Trinidad to nearby Venezuela had to be sent by sea to this country, which has convention arrangements with Venezuela, and sent back across the Atlantic—on occasion in a ship that calls at Trinidad on the way. I found a similar state of affairs in the Leeward Islands, as regards parcels for a French island so close that it could be seen. Yet the parcels had to go via France.

Clearance of debris, and the emollient effect of *expertise* is clearly wanted if commerce is to flow freely through the islands, and between the region and the rest of the world.

Whilst this overhaul is in progress the Federal Government will get down to central planning in a way which has never hitherto been possible. It will carry on and develop the work of the Regional Economic Committee—the most important, perhaps, of the pre-federal regional organizations, and one of the most successful in spite of the limitations set on its powers.

All this forms part of the general economic planning of the area. The need for such planning is very prominent in the minds of West Indian political leaders. I was interested to see in *The Times* a few days ago an advertisement for the necessary staff for a Federal Economic Planning Unit. At last there will be some attempt to correlate the potentialities of West Indian production and the possibilities of internal and oversea markets.

This overall economic planning will, of course, take into account manufactures. At present, in these essentially agricultural lands, there is but little manufacturing activity—apart from sugar making, oil refining and the processing of bauxite for aluminium: such manufacturing activity as there is looks to a small, highly localized market. Free trade in the region opens up fresh possibilities, and the fact that the needs of the region as a whole will be studied by a central authority—the appropriate federal minister and his expert advisers—suggests that under federation light industries may make considerable headway.

Development in the field of manufactures calls for capital, as does the general plan for an economic future. The West Indies have always been short of capital, even when we had large supplies of that commodity in this country. Now in a measure Canadian and American capital is coming in. Very much more will be needed, and a federation of 3 million people is a better risk for investors than a few thousands in a small island.

It will be by the success or failure of the new approach to economic matters that the ultimate value of the Federation to the people of the West Indies is measured. Like all constitutional forms, a federal form of Government is not an end but a means. Tools are being put into West Indian hands with which to work out their future. One important, perhaps the most important, task is to raise West Indian standards of living, which are still disgracefully low. If, as a result of the work of the Federal Government, standards of living rise, the Federation can be regarded as a success—not otherwise, for no one is going to be content with a political or constitutional set-up which merely satisfies political needs and ambitions. Decent houses have to be built, children have to be educated, clothes have to be bought, bellies have to be filled. The new federal

power will have to address itself to these matters. I believe that it will do so with success.

DISCUSSION

THE CHAIRMAN: I was very impressed, Sir, with your reference to the importance of education. I think you used the phrase that the university was a crucible welding the units together into a West Indian nation. That I think is a remarkable, clear-sighted and true statement.

LADY MOORE-GUGGISBERG, C.B.E.: Could the lecturer tell us what franchise is to be formed in the West Indies?

THE LECTURER: The final form of the franchise will of course have to be settled by the Federal Government when it comes into existence. The franchise basis for the first elections is the existing franchise in the Islands, in most of which it is for women as well as men.

MR. A. E. GARRISON (from Jamaica): The lecturer spoke of three officials to be selected by the Governor-General. Could he say whether these officials will be selected from the territories or from the United Senate?

THE LECTURER: The idea behind this I think is that, for the first few years the State Council, which of course is broadly a mixture of an Executive Council and a Cabinet, should have the benefit of officials on the spot, able to produce facts and figures and information conveniently and rapidly. One would expect—I do not think it has ever been stated so but the implication is—that the three officials would be the Federal Chief Secretary, the Federal Financial Secretary and the Federal Attorney-General. They attend meetings and discuss but they have no vote.

DR. B. G. ACHONG (of Trinidad): The lecturer spoke of the Federal buildings in Port of Spain and said that he hoped that they would be made of Barbadian coral and that the style would be Georgian. Granted Barbados has splendid Georgian buildings, Trinidad has not a very great tradition of architecture of any kind. Does Sir Hilary not think it would be progressive for us in Trinidad to build such buildings? We are not English and we are not Georgian in that particular tradition—would it not be better to create something new around the small Moslem tradition, which is lovely, and the Spanish influence round the courtyard? There is Scottish baronial nonsense in Trinidad, but we are not Scots and we are not barons out there. Even if it is pastiche it might be brilliant pastiche rather than aping, and being retrogressive. It is very easy to copy Georgian models.

THE LECTURER: When I talked of copying Georgian buildings I was thinking primarily of houses of course and not of offices. There are certain offices, like the public offices in Grenada, which have a Georgian front, but I was really thinking of houses when talking about the Georgian style. It you can invent something which is really suitable and fits into the background of Trinidad and is something which Trinidad and the Federation as a whole can be really proud of, by all means go ahead and do it. What I am so frightened of is that we may just see reinforced concrete skyscrapers. You have indications of that sort of thing in Trinidad at the moment. I seem to remember seeing quite a lot of them when I was there 18 months ago, and I think it would be an awful pity if the Federal buildings were built in that way. I hoped that somebody would jump on this idea of Barbadian coral and say it was nonsense! What I do think terribly important is the latter part of what I said. The Federation has the opportunity to be the first patron of building, of architecture and of design in the West Indies and it will be a pity if it wastes that opportunity by building almost the equivalent of

concrete prefabs. If you can produce something in Trinidad which, as I say, fits into the background and is generally appreciated and looks well, then by all means go ahead and do it, but do not just import it in blocks from Canada or America.

DR. ACHONG: There is a comparable point in Ghana; they, like us, have no real tradition of architecture. There is an American Embassy going up, and I have just seen the plans for it; it will not be made of concrete, but of mahogany and oak. It is very lovely and is not aping anything. I think it does fit into the background.

MR. L. A. BUSHE (of Trinidad): Before we leave the question of buildings in Trinidad may I put in a word for the local industry in Trinidad, brickmaking? I do agree with Sir Hilary that the coral rock stone makes a very nice building which would be suitable for the public buildings, but for the housing (I believe there are eventually going to be 10,000 people in this new town), I think they may be well advised to use the local brick. The previous speaker suggested wood, mahogany, but I think he will remember that in Trinidad there are very few woods that can stand up to the termites; and as I hope this Federal capital is coming to stay, the buildings must be built of something that will last.

THE LECTURER: I should certainly regard brick as an enormous improvement on reinforced concrete.

MR. A. J. RUTHVEN MURRAY (of Trinidad): Owing to the danger of earth tremors or earthquakes in Trinidad, of which I have felt at least ten in 21 years, I think it is wise to go in for modern building construction there, using reinforced concrete.

With regard to the use of Barbados coral lime stone blocks, a quantity of similar lime stone is to be found around Store Bay at the west end of the island of Tobago and could be quarried and transported from there.

SIR HARRY BATTERBEE, G.C.M.G., K.C.V.O.: All history has shown that good communications are essential to the success of any Federal system. Can Sir Hilary tell us whether steps are being taken to improve the transport?

I noticed Sir Hilary did not refer to the West Indian cricket team. Does he think that their playing together in games has done something towards encouraging the idea of the West Indies being one nation?

THE LECTURER: With regard to inter-island communication, that is very much in the minds of the various pre-federal organizations which Sir Stephen Luke has developed while Comptroller of Development and Welfare. I suppose that sea communications between the islands are about as bad now, if not worse, than they were in the time of the First World War: they are shocking. There is one ship at the moment, which came into service when I was in the West Indies about two years ago, doing the trip up and down the islands. There is only one. It is not terribly satisfactory I believe. I think that a second one is being brought into service, or that there is talk of it. But of course what has developed enormously is air transport. It is an ideal part of the world for air travel, the hops are short, and it is the most lovely country to fly over because you get those gorgeous views as you fly up and down from Jamaica to Trinidad, as I have done. There are aeroplanes going everywhere pretty well every day, so in so far as airborne traffic of both passengers and goods is concerned, that has made the most tremendous difference. It will no doubt go further in the future.

Sea traffic has got to be developed; it is one of the things that one hopes the Federal Government will get a hold of through their Minister of Communications, or whoever it is, and will try to develop and improve. It is essential, as Sir Harry Batterbee says. Lack of good intercommunication by sea is probably one of the things, one of

the influences, which has held up the Federation all this time and it is most important that sea intercommunications should be improved.

Now it is only by the exercise of the greatest forbearance that I have not referred to cricket, particularly as my wife and I to-day lunched with Sir Pelham Warner! You will remember that it was a Warner who first colonized St. Kitts in 1624, and dear old Sir Pelham, he is getting old now, is one of the same family and he still has his enormous enthusiasm for the West Indies. When G. O. Allen's team came out in 1948 Sir Pelham came out with them and he stayed with us in Barbados. It was the greatest job to go along what is called Broad Street in Barbados (it is one of the narrowest streets in the world) with him and see a Barbadian walk up to him and say 'Ha, ha, Mr. Warner! I remember you made duck here in '96'. I have not the slightest doubt that sport has been one of the greatest influences which has brought not only the islands but the different colours together (I am talking about this at some considerable length at Cambridge on Saturday), and has helped to smooth out plural society problems until they have reached a stage at which they are almost non-existent in the West Indies; and in the West Indies the sport *par excellence* is cricket. If a lad with a white face and a lad with a black face have played cricket together for the same school team, and one has admired the other as a bat and the other has admired the first as a bowler, I believe that they so lay a foundation for co-operation in later life, round the table of the town council or the Governor's Executive Council. I am perfectly certain of that. Cricket is in fact a religion, there is no other word for it: certainly in Barbados it is a religion and it is a very good religion too. I have no doubt that cricket has had a vast amount to do with smoothing away a great many of the difficulties in the West Indies and it has been also a binding force over the area.

MR. R. STEPHENSON: On the question of building in the West Indies, I would like to say in passing that if West Indian architects and materials are used in the building of the Federal Capital the resulting style of architecture will be West Indian and not Georgian or English or anything else.

Sir Hilary in his lecture mentioned Trinidad as the site of the West Indies Federal Capital and said that there was much he could say about it but time did not permit. Would Sir Hilary remark upon its suitability?

THE LECTURER: As an ex-governor of Barbados I regret profoundly that the capital is not to be in Barbados. As a perfectly truthful man I think Trinidad is the right place for it.

MR. A. E. GARRISON: I do not think that the location of the capital is of most importance in the initial state of this Federation. Personally, thinking of the kind of buildings that will be built, if they are going to be West Indian buildings, something that the West Indians are going to be proud of, I think they should not be something that would characterize the genius of Trinidad, but of all the West Indies together. On the customs questions, the finance of the West Indies, I would like to say this: that the United Kingdom has certain rules and regulations upon what certain countries must produce and how much. I was thinking particularly of Jamaica, which I know more about. We grow a lot of bananas, but you know we are allowed to grow only so much. I know of big estates where, after they have produced their quota, the ground is left barren. Now what I would like to ask is whether this Federation would be able to produce all that it can so that we would be in a position to eliminate some of our poverty, and would be able to sell to whomsoever we like, whether within or outside the Federation?

THE LECTURER: I am not, I am afraid, sufficiently well up either in the banana trade or the rum trade to know exactly what the regulations about quotas or whatever it may be in fact are. Of course it is quite impossible to say what people would or

would not be able to do under the Federation: it will be for the Federation itself to decide. But, as I tried to point out in the latter part of my paper, this whole question of raising the standard of living and getting rid of poverty involves finding ways of increasing wealth, whether it is by selling more bananas or more rum, by light industries, or by the investment of capital, by further exports of minerals, of oil and so on, or whatever it may be. One of the most important things that the Federation, the Federal Prime Minister and the planning Ministers have got to face is just this point of trying to get rid of some of the poverty. You have got to get to the stage when the standards of living do reach a decent level, and there is not the impetus to emigrate, for example, which exists at the moment. That is one of the most serious things that the Federation has got to tackle and just how it is going to tackle it, or in what way it is going to be tackled, it is quite impossible for us to foresee at the moment. All we can say is we believe that this is one of the great problems in the West Indies, and we believe the proper way to tackle it is on a Federal basis, on a regional basis; and we can say, as I have indicated, that planning to that end is already contemplated. Whatever the method to reach that end may be, the raising of the standard of living, the getting rid of poverty, is exactly the measurer by which the success or failure of the Federation is eventually going to be decided.

MR. FRANK JEREMIAH (of Trinidad): In his travels in the West Indies, Sir Hilary must have come across some of our older people who were West-Indian minded long ago, and contributed to the idea and emotion of West Indian nationhood. I am particularly referring to people like Mary Shaw of Granada, Banister Smith of Jamaica and others. I myself was brought up in a household where we were taught to think of ourselves as West Indians; we were brought up to think not in insular terms but as members of a wider community of the West Indies. Would Sir Hilary care to comment?

THE LECTURER: There are indeed people who have thought on wide lines like those you have referred to, and you yourself were lucky to be brought up in such a home. But my experience, such as it is, of the rank and file of people was that they did think of themselves primarily as Jamaicans, Trinidadians, or whatever it might be, and not as West Indians. I think that there has always been this idea in the minds of the more far-seeing people, people like those to whom you refer. But this great wave of nationalism passing through the islands as a whole, that, I think, is a much more recent development. It certainly did not exist when I was in Grenada in the 1930s, I am quite sure of that. Just how recent it is I would not like to say, but it is a thing which has grown, and it covers people of a much less wide-thinking variety than those you refer to. It is, to my mind, the cumulative effect of that wave that has led these places to ask to be 'bound together in Federation' as they did in February last year.

A vote of thanks to the Lecturer was carried with acclamation, and the meeting then ended.

OBITUARY

We announce with regret the death of three Fellows of the Society:

THE AGA KHAN

The Aga Khan died at Versoix on Lake Geneva on 11th July, aged 79.

His Highness the Right Honourable the Aga Sultan Sir Mahomed Shah, G.C.S.I., G.C.I.E., G.C.V.O., G.C.M.G., the third holder of the title 'Aga Khan' bestowed by the British Government, was born at Karachi, on 2nd November, 1877. A direct descendant of Fatima, daughter of the prophet Mahomed, of the Beni-Fatimite Caliphs of Egypt, and of the Kwaja Dynasty in Persia, he became, on the death of his father in 1885, the forty-ninth Head of Ismaili community. In the next 70 years he used all the great influence of his position in the interests of his followers, and of the Muslim world in general, and sought always and with notable success to foster good relations between the British Commonwealth and the countries of the Near and Middle East, thereby perpetuating the tradition of assistance to British policies established by his grandfather, the first bearer of the title 'Aga Khan'.

On his first visit to England in 1898, the Aga Khan had stayed at Windsor Castle as the guest of Queen Victoria. This visit inaugurated a series of close personal relations with the sovereigns who succeeded her. When war broke out in 1914, he immediately impressed on his Ismaili followers their obligations to the British crown, and his personal example of loyalty carried great weight with the Muslim world in general.

The post-war world brought him new opportunities for leadership in imperial and international affairs. His combination of firmness, moderation and sagacity was shown in a striking manner at the three sessions of the Round-Table Conference, held in London in 1930-1932, when he was leader of the Muslims and of the entire British-Indian delegation.

Ill-health prevented the Aga Khan from playing as active a role in the Second World War as he had in the First, but again he stressed to his followers that they should be loyal to Britain.

To the general public in this country, the Aga Khan's name was chiefly associated with the Turf, where his horses had so many triumphs; his success as an owner was spectacular, and the influence of his stud on the breeding of race-horses great and lasting. But his love of racing was only one aspect of his personality. He had a remarkably acute, well-stored and versatile mind, moving freely over political, philosophical and religious questions alike. A fluent linguist, and widely read, he had also considerable gifts as a writer, as his *Indian in Transition* (1918) and *Autobiography* (1954), in their different ways, showed. A Persian by descent, an Indian by adoption, he was well described as 'a citizen of the world'.

He was made a K.C.I.E. in 1898, and promoted G.C.I.E. in 1902. In 1911 he was made a G.C.S.I., in 1923 a G.C.V.O., and in 1955 a G.C.M.G. He was sworn of the Privy Council in 1934.

The Aga Khan was elected a Life Fellow of the Society in 1936.

SIR GEORGE STOTT

Sir George Stott, Bart., died on 11th July, aged 70. Educated at Rossall School, in 1907 he joined his father, Sir Philip Stott, first baronet, an architect specializing in the design of cotton mills, in practice at Oldham. After service with the Manchester Regiment in the First World War, he took charge of this practice from 1920 until his retirement in 1935. He was a Fellow of the Incorporated Association of Architects and a Licentiate of the Royal Institute of British Architects. He served in the Royal Air Force in the Second World War. In 1947-1948 he was High Sheriff of Gloucester-

Air Force in the Second World War. In 1947-1948 he was High Sheriff of Gloucestershire.

Sir George was elected a Fellow of the Society in 1936.

MR. A. BARNEY SEALE

Mr. A. Barney Seale, the sculptor, died on the 22nd July, 1957.

He was perhaps best known for his large-scale work which included the group of the Perfect Man, Woman and Child for the British Pavilion at the British Empire Exhibition at Glasgow in 1938, the Lion for the British Pavilion at the World Fair in New York in 1939, and the 38-foot high figure of the Goddess Ceres for the International Garden Exhibition at Olympia in 1949. In the International competition for an equestrian statue of King Fuad I of Egypt, he was chosen to represent Great Britain, and was placed among the finalists.

Barney Seale was also, however, a sculptor modeller of conversation pieces for porcelain and a painter in oils, and his best known porcelain group 'Boswell's first meeting with Dr. Johnson', now in the private collection of H.M. The Queen, was first shown publicly in the Society's 'Exhibition of Exhibitions' in 1951.

Mr. Seale was elected a Fellow of the Society in 1939.

NOTES ON BOOKS

A PORTRAIT OF ENGLISH CATHEDRALS. By Herbert Felton, with text by John Harvey. London, Batsford, 30s

So many illustrated books about English cathedrals have been produced, from the days of Britton, Winkles and Storer, to the present time, that it can hardly be possible for anyone not to know what they look like. But no doubt each new book throws some fresh light on the subject, and will be appreciated by someone. This is a collection of photographs of twenty-six cathedrals, including some that became cathedrals only in the nineteenth century—Ripon, St. Albans, Southwark and Southwell—but excluding Manchester and Newcastle, the twentieth-century parish church cathedrals, and Truro and Liverpool. The collection therefore represents, in the words of the preface, 'the whole of a major architectural group' rather than cathedrals as such. John Harvey in the introduction makes it clear what a cathedral is, and explains that it need not be large, and that it need not differ architecturally from any other church. But to the ordinary man a cathedral is not the place of a bishop's seat; it is an unusually large church. He is ready to believe that Tideswell, being larger than the neighbouring churches, is the cathedral of the Peak, and that Widdecombe is the cathedral of the Moors. A book like this might confirm him in his belief, or at any rate suggest that the smaller buildings are not quite as much cathedrals as the rest. Within its limits, however, the book has merits: it is very well produced, and some of the photographs are good. But there are not enough of them to explain some of the cathedrals to those people who have not already seen them: there is, for instance, no illustration of the east window of Carlisle, which is described at some length in the notes. One or two of the photographs are rather odd. That of the south transept of Worcester shows mainly the monument of Bishop Philpott (1892) and a large sheaf of painted organ pipes—which certainly gives an impression of the abundant Victorian work in this cathedral, but hardly fits in with the purpose of the book.

The last photograph of York—showing several road signs and shop signs, and an advertisement for Ovaltine—looks like something cautionary from the *Architectural Review*, and hardly helps us to understand the cathedral.

John Harvey has condensed a good deal of information into a small space. He gives, as one would expect, the names of the master builders when they are known. But he manages to describe St. Paul's without mentioning Wren. The only

nineteenth-century architects named are Street, Pearson and Lord Grimthorpe. It is not the purpose of the book to describe nineteenth-century work; but how few of us could have written about twenty-six cathedrals without mentioning Sir Gilbert Scott!

B. F. L. CLARKE

SHORT NOTES ON OTHER BOOKS

VISION AND DESIGN. By Roger Fry. Chatto and Windus, 1957. 10s 6d

This is the seventh impression of the first edition of selected writings by the late Roger Fry, extending over a period of twenty years. It was first published in New York by Coward-McCann in 1924.

THE NATURE OF AFRICAN CUSTOMARY LAW. By T. Olawale Elias. Manchester U.P., 1956. 30s

African legal theory is here introduced within the framework of African jurisprudence. The basic concepts underlying African law are analyzed and interpreted against their social and juridical background.

FROM THE JOURNAL OF 1857

VOLUME V. 14th August, 1857

RECREATION AND RESPONSIBILITY

WENLOCK.—The members of the Olympic class, connected with the Agricultural Reading Society, met on Wednesday morning, the 5th inst., at 9 o'clock, and proceeded in procession to the racecourse, where the men engaged in games of quoits, leaping heights and distances, foot races, etc., for which prizes varying from a few shillings to a sovereign were given. The afternoon's sport consisted of hurdle racing, foot racing, donkey racing, a jingling match, a wheelbarrow race, and climbing the pole. At about five o'clock, the Rev. Mr. Hayward distributed the book prizes to the children who were successful in the industrial and intellectual competition, in which an examination had been recently held. The books were handsomely bound and illustrated, and were mostly on useful and entertaining subjects. The presentation of the books was accompanied by some seasonable advice to the recipients. The games having ended, the procession re-formed, and, upon reaching the hall, three cheers were given for Mr. W. P. Brookes, who thanked them for this expression of kind feeling. He congratulated them on the innocent recreation which those meetings afforded to many whose lives were spent in toil; and on the good this class was effecting in an educational point of view. . . . He thought that England should not neglect any precaution, however humble, that might be calculated to add to the stability of her empire; and the bodily training of her youth was of the utmost importance. But the Wenlock Olympic class was instituted, not for athletic exercises only, but for the encouragement of useful, industrial, and intellectual attainments. They had not been unmindful of these objects, but had marked their estimate of the value of a common sound English education of both sexes of the labouring classes, by the announcement of appropriate prizes for knitting, plain sewing, writing, reading, spelling, arithmetic, and Bible and English history. There had also been an additional prize this year for drawing, the encouragement of which, he thought, would be of great advantage. The prizes distributed were small, but their utility and value would be much increased if the children would read attentively their books, and the young men would place their money prizes in the savings bank, and endeavour to add to the amount, from time to time, such small sums as they might be able to spare out of their weekly earnings. Dancing then commenced under the hall, and was kept up for several hours.